

Prof

Caldwell (J. J.)

A REVIEW



RECENT RESEARCHES  
IN THE  
Pathology and Treatment  
OF  
CANCER.

BY J. J. CALDWELL, M. D.  
64 ST. PAUL STREET, BALTIMORE.

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# PATHOLOGY & TREATMENT OF CANCER.

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MR. PRESIDENT AND FELLOW MEMBERS:—

As the Planet on which we live was submerged by the waters of the historic flood, leaving its glacial foot prints upon the Everlasting Hills, so has our Mental Sphere been overwhelmed with theories which have arisen, had their day and vanished; scattering, here and there, their crystal truths.

It is scarcely necessary to cite in proof of the above, the late discoveries, in Surgery and Chemistry, Anesthesias, Hyphnotics, Microscope, the Spectrum, Electricity, and many other benefactors to the learned Profession.

May we not hope, from the varied experience which we will now cite, to find some truths, concerning this *terra incognita* of morbid growth, CANCER.

## PATHOLOGY.

Reviewing the Pathology we cannot do better than to quote liberally from the first of the Tonerian Lectures, before the Smithsonian Institute, (delivered March 28th, 1873,) by J. J. Woodward, Assistant Surgeon, U. S. A., upon the subject of our present paper.

Surgeon Woodward, in his able and exhaustive Lecture, says, "that in the earlier days of histological investigation the followers of Schwann supposed cancerous and other tumors to arise by free cell development, in a formless blastema exuded from the blood-vessels. The causes of the specific characteristics of individual growths were then naturally sought in the blastemata, and the peculiarities attributed to the blastemata were accounted for by supposing them to depend on special morbid conditions, or dyscrasias of the blood."

This hypothesis met with general acceptance, and became the prevailing doctrine of the European and American Schools through the ripe developments and masterly expression of Rokitsanski, though physiological Chemistry was incompetent to the detection of



any actual difference in the composition of the blood, upon which to found such a speculation. It was left to Virchow to dissipate these speculative opinions. He found "in the connective tissue in the vicinity of Cancers and many other morbid growths, little groups and rows of cells, which he supposed to have been developed out of the normal connective tissue corpuscles. Similar heaps and rows were to be observed in the connective tissue of inflamed organs." New pathological conditions were supposed to originate in the multiplication of normal cells, and "the connective tissue corpuscles were the actual point of departure in by far the majority of cases."

Virchow thus protested against the doctrine of a primary cancerous dyscrasia, regarding the young cancer elements anatomically identical with those of granulation tissue, the origin of the first growth being looked for in local influences, and not in a cancerous cachexia. It was two of Virchow's own assistants, Von Recklinghausen and Cohnheim, who, by a brilliant series of discoveries, overthrew the splendid generalizations of their master. The paper of Cohnheim, on Inflammation, published in Virchow's *Archiv*, in 1867, (as remarked by Dr. Woodward,) "marks an epoch in the progress of our pathological views as important as the appearance of the cellular Pathology."

The conclusions of Prof. Carl Thiersch, of Erlangen, are adverse to the doctrine of Virchow, "that cancers originate by the multiplication of the connective tissue corpuscles." Thiersch's doctrine is that the essence of the morbid process rests in a "cell multiplication in the soft layers of the epidermis, and in the epithelium of the glandular appendages of the skin, especially the sebaceous follicles. The result of this cell multiplication is the production of cylindrical processes, composed of epithelial cells, and growing into the adjacent connective tissue, which disappear before, them precisely as happens during the development of hair sacs, and sebaceous glands in the fœtus," "the cancer cylinders standing in direct anatomical connection either with the principal cancerous growth, or, at its margin, with the sebaceous glands, of the rete-malpighii."

In an elaborate essay on the development of carcinoma, published in Virchow's *Archiv*, in 1867, by Professor Waldeyer, of Breslau, he endeavored to extend the views of Thiersch to all other forms of cancer. He recognized no essential differences between the so-called epithelial and other cancers, regarding them all as develop-

ing alike by the budding out of cancer cylinders, from some normal epithelial structure. "The cells of the cancer cylinders have, everywhere, a more or less epithelial type, as was pointed out by Virchow as long ago as 1847."

Dr. Karl Kœster, of Wurzburg, "signalizes the fact that when in epithelial cancers of the skin, large horizontal sections are prepared, the cancer cylinders are found to anastomose freely, forming a true net-work, which corresponds in form to the normal network of the lymphatics." Dr. A. Classen of Rostock regards the "cells of the cancer cylinders, and indeed all the new elements of cancerous growths, as no other than migrated white blood corpuscles, escaped from the blood-vessels; these new elements being made up of "what might be denominated wandering corpuscles."

Surgeon Woodward remarks that in the latter part of 1871 his own investigations led him to the conclusion that "the migration of the white corpuscles played a great role in the development of cancerous growths, and that at least in certain cases, the cancer cylinders were formed by the transformation of these corpuscles, which first accumulated in the lymphatic capillaries, and the passages leading to them."

Hackel of Jena has observed in fluids a microscopical being which he, under the name of *Monus*, has described as a perfectly homogeneous, transparent mass of orange-colored jelly, in the form of a cell.

By sending out prolongations as pseudopodes, it moves about in search of food, envelops other microscopical organs, absorbs the nutritive parts and leaves the indigestible behind. There is no digestive canal, but all nutriment is taken through absorption from the external surface; here and there is an organism, in its very simplest primitive form; an organism without organs, enclose it in the same way as the closed serous membrane covers the different organs.

By following up his observations under the microscope he was able to see these organs become filled and expanded with numerous cells, which were set free, after bursting the mother envelope.

The cells, so set free, commence to set free pseudo pardo, move about, &c. just as the mother cell, and carry on as brief an existence as herself.

Dr. Woodward, after having read a paper of Classen on the subject, says that he is more than ever impressed with the importance

of the part taken by migrating white corpuscles in the genesis of cancerous growths.

In a second article, in the development of carcinoma, published in Varchow's Archiv of June, 1872, by Professor Waldeyer, he substantially reaffirms the similarity of development between the so-called epithelial and other cancers, admitting that the elements of the small-celled brood are migrated white corpuscles, and that Kœster's view, that the cancer cylinders lie in the lymphatic passages, is very often correct, still holding firmly to the doctrine that "the cylinders themselves are always outgrowths from some normal epithelial structure with which they yet retain their connection."

We trust you will pardon us, Mr. President, when we modestly express our surprise that little or nothing, as far as our knowledge extends, occurs among the writings of the greater savans concerning the influence exercised by nerve currents or powers on cell formations, beneficially or detrimentally.

It occurs to us that the nerve force, in its effects and action upon cell structure, presents a close analogy to Electro-plating. Indeed there is such an intimate alliance between these two mysterious forces, as to render distinction between them inappreciable by the human intellect, except, as it was said by Sir Wilson Phillips, of London Academy of Science, that "the latter is incapable of restoring the vital spark to departed ones."

As an illustration of this analogy we would refer to the changes presented by the phenomenæ in electro-plating, with varieties of the Battery, Elements and fluids; contemplating these it is not difficult for us to suppose that like irregularities could be effected through varying influences of nerve forces at the centres and peripheries. We candidly believe that until this hidden power, nerve influence, is more fully comprehended in its relation to cell formation, we will continue to remain in that condition lately, in an able manner defined, by one of our popular journals, when referring to Prof. Brown Sequard's beautiful lecture, recently delivered, on the "Mechanism of the Brain."

After referring to the Doctor's undoubted ability and his demonstration of the seat in the Brain of the volitional, sensorial and mental phenomena, the Journal remarks that we "are just as far from knowing anything about the mystery as was the devotee who gazed on the problem in the Temple of Sais, which told him, 'I am all that I was, all that is, and all that shall be.'"



Spite of the great research and application of modern science upon this subject no man has yet been able to place his learned touch upon the precise spot of human cerebral anatomy, when in search for the seat of sensorial and mental phenomena, and exclaim *Eureka!* It is to be feared that all, yea the most ardent devotee to Science and searcher after the hidden truths, and grand mysteries of our organism, will only be led to repeat, "I am all that I was, all that is, and all that shall be—and my veil hath no man raised."

### TREATMENT.

In this connection we would cite the remarkable success which the learned Althaus of London has met with in the treatment of Cancerous tumors, by Electrolysis. Of sixty-three cases treated by him up to 1868, by Electrolysis, fifty-two were non-malignant and eleven of the malignant kind. The total result of the former was sixty-two per cent. cured, twenty-six improved, and twelve unknown. The doctor remarks that almost all the unsuccessful cases occurred in the commencement of his electrolytic practice, when the method of procedure had not been so well developed as it is now.

"The facts that the peculiar lancinating pains of Cancer generally disappeared soon after the commencement of the treatment, and that, even in rapidly growing Cancers, the growth is often checked by it, seem to show that, by steadily working in the same direction, a remedial agent so powerful as that of Electrolysis, may yet be found to be instrumental in overcoming the local manifestations of this terrible disease."

Besides Althaus we might refer to the following eminent names of those who have successfully treated these tumors by Electrolysis: Benedikt, Billroth, Paul Bruns of Germany; Lawson Tait, Fagge and Calender of England.

Mr. Lawson Tait treated a case of Encephaloid disease of the Femur by Electrolysis, complete relief from pain, for four or five days, following each application, except the first. The intensity of the pain had been so great that it had been found necessary to administer hypodermic injections of from 20 to 24 grains of morphia daily.

Bruns gives a valuable analysis of the reported cases of *Naso-pharyngeal Polypus*, nine in number, treated by Electrolysis, seven resulted in complete cure.

Neftel claims to have destroyed a number of Cancerous growths, with better results than usual in the way of recurrence, by means of Electrolysis. He believes that the Cancer Cells, being of low vitality, are kill-

ed by the current, even when they are not in a position to be directly decomposed.

Dr. Gilman Kimball of Lowell, in his report of cases of Uterine Fibroids, treated by Electrolysis, says that "he generally found it most convenient to attack the disease through the abdominal walls. In some cases, however, when the fibroid growth had projected itself downward so as to involve a portion, or, as it sometimes does, the whole of the neck of the uterous, he made the attack through the vagina, thrusting one electrode into the tumor in that direction, and the other into the upper part, through the abdominal parietes. He witnessed no ill effects, local or constitutional, following this operation. For some hours after, the patient suffers considerable pain through the pelvic region, also some feverish excitement, as denoted by a quickened pulse, thirst and increased sensibility in the direction of the tumor. These symptoms however, are not lasting, and in a day or two, the patient declares herself entirely free from suffering of any kind.

At a late meeting of the British Medical Association, Dr. S. M. Bradley, in a paper in which he attempted to establish the essential oneness in origin of all morbid growths, characterized by the abnormal development of epithelial elements, such as scirrus, epethelium epulis, and common warts, maintained that, as electricity, by coagulating the albumen of a part, establishes a barrier to the onward march of the cell elements it should therefore be employed in all cases of infiltrating tumors, when it is decided to eradicate the growth.

Dr. J. Byrne, of St. Mary's Hospital, N. Y., reports seventy-three electric cautery operations in Uterine Surgery, his success being remarkable, most of the cases being malignant or non-malignant tumors. The operations were performed in the presence of Drs. Marion Sems, Rob't Emmett, J. C. Nott and other eminent gentlemen.

We have also to record our own testimony in behalf of the treatment by Electrolysis, from our own experience and operations for the removal of morbid growths, which, as we have already shown elsewhere, have been quite numerous. We will close this, we fear already too lengthy and tedious paper, by remarking that the study and practice of Electro-Therapeutics now claim the attention of the most eminent medical minds; of "men whose position and abilities inspire the confidence of their fellow practitioners, and who are doing their utmost to rescue this specialty from the hands of unscientific men, to place it in the proper position. A great deal of good and careful work is now going on in this specialty, in all parts of the world, and the value of electricity, as a therapeutic agent, may be said to be slowly but steadily increasing." "If practitioners in general would make themselves more familiar with this therapeutic agent, and ascertain what it is capable of accomplishing, Electricity would become much more popular with the Profession than it has been."